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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,931	11/08/2000	Atsushi Yamamoto	001348	8056

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EXAMINER

BALSIS, SHAY L

ART UNIT	PAPER NUMBER
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1744

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/674,931

Applicant(s)

YAMAMOTO ET AL.

Examiner

Shay L Balsis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 16, line 19 reads "Tufts 11, 12, 21 to 24, 31 to 34, 41 to 44, 51 and 53" however it should read - Tufts 11, 12, 21 to 24, 31 to 34, 41 to 44, 51 and 52-.

Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 110, 120, 130, 140, 150 and 210. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 6, 8-9 and 16 are objected to because of the following informalities:

Claim 6 recites the limitation "a pair of 2 tufts" in line 3. Examiner suggests applicant write out the number 2, so as to avoid confusion with reference number 2.

Claim 16 recites the limitations "there are a 5 rows" in line 3, "with Rows 1 and 5" in line 3, "Rows 2 and 4 forming 2 converging blocks" in lines 5-6, "Row 3 forming one converging block" in lines 7-8 and "there is 1 independent tuft" in line 9-10. Examiner suggests applicant writes out the row numbers, the number of converging blocks and the number of independent tufts, so as to avoid confusion with reference numbers.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the tufting holes" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the tufting part" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the tufting surface" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the lengthwise direction" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the direction of handle" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the inside" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the monofilaments" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the tufts" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the direction" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the long side" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the end portion" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the front" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the back" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the tufting base" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the next row" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the space" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the front row" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the tufting base" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the folded part" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the center" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the long side" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the short side" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the opening surface area" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the center line" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the lengthwise direction of said tufting hole" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the direction of handle length" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the direction of handle width" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the short side" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the long side" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the distance" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the base" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the converging blocks" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the center" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the direction of width" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the tufting base" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the outside" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 states limitations about how the converging blocks are set up in the rows of the toothbrush. However, it is unclear from the claim language how exactly the tufts are aligned. Applicant needs to clarify the language used to demonstrate how the converging blocks are placed in each row.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-2, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 62-106523.

The Japanese patent discloses a toothbrush comprising elliptical tufting holes (1₁ in figure 2b) that are inclined toward the tufting surface (2) of the toothbrush as shown in figures 1-3. The lengthwise direction of the elliptical tufting holes is in the same direction as the length toothbrush handle. There are pluralities of bristle tufts or converging blocks that face and support one another (1₁ in figure 1a, 2a, 3a). These converging blocks are located at the front and the back of the tufting surface as shown in figure 2a by reference numerals 1₁.

9. Claims 1-2, 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Fischer (USPN 6237183).

Fischer discloses a toothbrush comprising almost elliptical tufting holes (6 in figure 3) that are inclined toward the tufting surface (3) of the toothbrush. The lengthwise direction of the elliptical tufting holes is in the same direction as the length toothbrush handle. There are pluralities of bristle tufts or converging blocks that face and support one another (6 in figure 1).

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These converging blocks are located at the front and the back of the tufting surface as shown in figure 1 by reference numerals 6.

10. Claims 1-4, 6, 8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Nicolas (USPN 4706322).

Nicolas discloses a toothbrush comprising almost elliptical tufting holes (32) that are inclined 10 degrees with respect to the vertical (col. 3, lines 59-68, figure 4) toward the inside (33, 37) of the tufting surface (39) of the toothbrush. The lengthwise direction of the elliptical tufting holes is in the same direction as the length toothbrush handle. There are pluralities of bristle tufts or converging blocks that face and support one another (33, 37). These converging blocks are located at the front and the back of the tufting surface as shown in figures 1 and 4. The brush head has a width of 12 mm and a length of 20 mm. As shown in figure 1, the tufting holes account for a majority of the brush head and therefore account for 10-30 mm in the direction of the handle length and 5-15 mm in the direction of the handle width as specified in claim 13.

11. Claims 1-2, 5, 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Curtis et al. (USPN 5446940).

Curtis et al. discloses a toothbrush comprising almost elliptical tufting holes (col. 1, lines 53-55) that are inclined that are inclined at about 12 degrees with respect to the vertical toward the tufting surface (20) of the toothbrush (figure 8). The lengthwise direction of the elliptical tufting holes is in the same direction as the length toothbrush handle. There are rectangular tufting holes (248) that accommodate rectangular tufts. The dimensions of the tuft are 0.047 in (1.193 mm) on the shortest side and 0.060 in (1.52 mm) on the longest side (col. 6, lines 38-47).

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As shown in figure 7, the longest side of the tuft hole is in the lengthwise direction of the handle. The distance at the base between of the paired tufts is about 0.065 in (1.65 mm). The paired tufts can include the bristles next to each other on the brush head such as the first pair of bristles (30) on figure 7 on the bottom left corner (col. 6, lines 1-8). The bristles (30) are in the same lateral row as the middle bristles (32) and therefore the spacing between the rows of middle bristles (32) is the same as the spacing between outside bristles (30).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62-106523 in view of Oishi et al. (USPN 5799353).

Japanese patent 62-106523 teaches all the essential elements of the claimed invention however, he fails to teach that the bristle ends are worked into a V-shape. Oishi et al. teaches a

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toothbrush comprising elliptical tuft holes with bristles tufts that are shaped in a V-formation (figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to shape the Japanese patent bristles in V-formation to allow for strong stiffness of the bristles and excellent plaque removal efficacy while suppressing excessive stimulation to gingiva (col. 4, lines 1-45).

15. Claim 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (USPN 6237183) in view of Solanki et al. (USPN 6314605).

Fischer teaches all the essential elements of the claimed invention however, he fails to teach rows of converging blocks that are offset from each other and he fails to teach bristles that are not lined up in one straight line. Solanki et al. teaches a toothbrush with bristles tufts offset from each other as shown in figure 4. This in turn teaches bristles that are not lined up in a straight line in the lengthwise direction of the handle. It would be obvious to one of ordinary skill in the art to have the paired bristle tufts or converging blocks in one row offset from the converging blocks in the next row in Fischer's invention as shown in Solanki's invention to allow the tufts or converging blocks to operate independently of each other to avoid obstruction from other tufts or converging blocks. Thus, allowing the tufts to penetrate better into interproximal areas (col. 4, lines 27-38).

16. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curtis et al. (USPN 5446940) in view of Chen et al. (USPN 5590438).

Curtis et al. discloses all the essential elements of the claimed invention including groups of tufts that are anchored into round cavities, however, the reference is silent about the type of anchoring means used. Chen et al. teaches a method of anchoring bristles to a toothbrush. Chen

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teaches folding the bristle tuft in half, placing in a tuft cavity and driving an anchor into the tuft cavity to hold the bristles into the tuft cavity. The anchor can be positioned numerous ways based on the tuft shape as shown in figures 6-11, such as one where the anchor is parallel to the short side of the tuft cavity as in figure 10. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Chen's method of anchoring as the anchoring method in Curtis's invention to prevent bristles from loosening and falling out of their tuft cavities (col. 1, lines 26-40).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent has been cited to further show the state of the art:

USPN 6202241 to Hassell et al.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shay L Balsis whose telephone number is 703-305-7275. The examiner can normally be reached on 7:30-5:00 M-Th, alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Warden can be reached on 703-308-2920. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5665.



ROBERT J. WARDEN, SR.
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